



Annual Assessment Report 2022-2023

BS Biology, Biotechnology, & Environmental Biology

Biological Sciences

College of Science

CONTACT

Name of Program Assessment Lead Wendy Dixon

Name of Person Completing Report Wendy Dixon

DISCIPLINARY ACCREDITATION No

DEVELOPMENT AND DOCUMENTATION OF STUDENT LEARNING OUTCOMES

How were the program's SLOs developed? (select all that apply)

- We do not have disciplinary accreditation but drew from our disciplinary/professional organizations, and developed our SLOs as a program/department.

Other than the [CPP Catalog](#) and the [Office of Assessment and Program Review website](#), where else are your SLOs published? Select all that apply.

- Department Website - provide URL: <https://www.cpp.edu/sci/biologicalsciences/about/undergraduate-studentlearningobjectives.shtml>

ASSESSMENT ACTIVITIES IN 2022-2023

This section provides the opportunity for programs to share and discuss assessment activities conducted in **AY 2022-2023**. This includes data collection, rubric development, data analysis, discussion of findings, development or implementation of closing the loop improvement strategies, update of your assessment plan and/or curriculum matrix, etc.

How many total SLOs does your program assess according to your assessment plan?

- 4

How many SLOs did your program assess this past year in 2022-2023?

- My program assessed SLOs in AY 2022-2023 (e.g., artifact collection, scoring, closing the loop, etc.). May also have engaged in assessment planning activities unrelated to specific SLOs (e.g., modified curriculum matrix, assessment plan, etc.).

Please list the SLOs examined

- SLO #1: Students will demonstrate an understanding of core concepts spanning scales from molecules to ecosystems, by analyzing biological scenarios and data from scientific studies. Students will correctly identify and explain the core biological concepts involved relative to: biological evolution, structure and function, information flow, exchange, and storage, the pathways and transformations of energy and matter, and biological systems.
- SLO #2: Students will select and competently use laboratory equipment, field equipment, and technologies to collect and manage data, consistent with professional expectations in the biological
- SLO #4: When given problems or proposing, designing and analyzing biological research questions, students will demonstrate competency in critical thinking, quantitative, analysis and oral and written communication skills essential to career development in the biological sciences by presenting their work both orally and in writing in a manner consistent with professional expectations.

Student Learning Outcome (SLO): Students will demonstrate an understanding of core concepts spanning scales from molecules to ecosystems, by analyzing biological scenarios and data from scientific studies. Students will correctly identify and explain the core biological concepts involved relative to: biological evolution, structure and function, information flow, exchange, and storage, the pathways and transformations of energy and matter, and biological systems.

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
<ul style="list-style-type: none"> Collected direct evidence (e.g., student work, exam items, etc.) Scored direct evidence of student learning Interpreted and made meaning of findings for direct evidence 	<ul style="list-style-type: none"> Exam created by external organization (e.g., professional licensure) 	<ul style="list-style-type: none"> Scored exams/tests/quizzes External organization/person analyzed data (e.g., external organization administered and scored the NCLEX)

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
298	Comparison of performance to other institutions	Yes	No improvement in scores at end of introductory biology, seniors have improvement in test scores in spite of effects of COVID pandemic, scores each year are very consistent. Area of lowest scores is Information Flow, highest scores are in Systems, Energy transformations, Ecology and Evolution and these are consistent across all levels.

Student Learning Outcome (SLO): Students will select and competently use laboratory equipment, field equipment, and technologies to collect and manage data, consistent with professional expectations in the biological

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
<ul style="list-style-type: none"> Collected direct evidence (e.g., student work, exam items, etc.) Scored direct evidence of student learning Interpreted and made meaning of findings for direct evidence 	<ul style="list-style-type: none"> Other: written assignments 	<ul style="list-style-type: none"> Used a rubric or scoring guide

Findings			
N of Artifacts	Criterion Used	Goal Met	Eye-opening Result
9	Evaluation ranking – proficient or advanced	We do not have a set goal, but level of proficient or advanced was 78% which is in the ranges used to be considered acceptable.	Our results were good considering that these are science students and many may have English as their second language.

Student Learning Outcome (SLO): When given problems or proposing, designing and analyzing biological research questions, students will demonstrate competency in critical thinking, quantitative, analysis and oral and written communication skills essential to career development in the biological sciences by presenting their work both orally and in writing in a manner consistent with professional expectations.

Assessment Activities	Evidence Used	Evaluation and Interpretation of Evidence
<ul style="list-style-type: none">• Collected indirect evidence of student learning (e.g., surveys, interviews, focus groups, etc.)• Interpreted and made meaning of findings for indirect evidence	<ul style="list-style-type: none">• Student survey/interview/focus group with self-reports for SLO achievement	

IMPROVING THROUGH ASSESSMENT

Overall, what best describes how the program used the results in 2022-2023? Select all that apply.

- Course-level changes (e.g., syllabus, content, pedagogy)
- Resource allocation changes (e.g., funding for professional development, workshops, etc.)

Ideas to improve student learning can come from different constituents. With whom did the program discuss assessment planning and/or share results during AY 2021-2022? Select all that apply.

- Program/department faculty as whole
- Program/department assessment committee

The past academic year posed both challenges and opportunities. Please share any assessment discoveries (e.g., insights about assessment procedures, great achievements, etc.) regarding program assessment in 2022-2023 so that others may learn from your experiences.

We discovered a pattern of little gain in student understanding after our introductory biology series, so we developed a task force to revisit and make recommendations for change. The task force was delayed last year but plans to start coming up with recommendations during spring 2024. Overall, the program is meeting its goals and students are appreciative of the department's efforts to help them meet the program objectives.

Please share how the program triangulates various data sources to determine student success. Consider assessment findings, [CPP's GI2025 markers](#), [CSU Dashboard](#), [CPP's Student Success Dashboard](#) on Tableau, course evaluations, etc.

We did not triangulate data sources in 2022-2023.

Does the program offer a certificate or credential (e.g., teaching credential)?

- No

The most current assessment plan and curriculum matrix we have on file for your program may be found [here](#). To ensure we have the most updated assessment plan and curriculum matrix for your program, and for posting on our website, please upload the following documents:

Assessment Plan - No

Curriculum Matrix - No